

**CITY OF PLUMMER (PWSNO 1050021)  
SOURCE WATER ASSESSMENT REPORT**

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**February 24, 2003**



**State of Idaho  
Department of Environmental Quality**

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## Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This risk assessment is based on a land use inventory in the well recharge zone, sensitivity factors associated with how the well was constructed, and aquifer characteristics.

This report, *Source Water Assessment for the City of Plummer*, describes the public drinking water well; the well recharge zone and potential contaminant sites located inside the recharge zone boundaries. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this public water system. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Plummer community water system has 413 connections serving a population of 800 residents. Plummer is located adjacent to Highway 95 in western Benewah County. 4 wells drawing from a basalt aquifer supply drinking water and water for fire protection. A ground water susceptibility analysis DEQ conducted January 13, 2003 ranked Well #1 at low risk relative to all classes of regulated contaminants. Wells #2, #3, and #4 are moderately susceptible to contamination. Risk factors related to local geology added the most points to the final susceptibility scores.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Continuing to operate and maintain the wells in compliance with the *Idaho Rules for Public Drinking Water Systems* is probably the most important drinking water protection available to City of Plummer. The City needs to develop a cross connection control ordinance. The City should consider forming ground water protection partnerships with landowners in the recharge zone, and help them assess business, household or agricultural activities for their potential impact on water quality. Developing a water emergency response plan is also an important part of an overall drinking water protection strategy.

Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. For assistance in developing protection strategies, please contact your regional Department of Environmental Quality office or the Idaho Rural Water Association.

# SOURCE WATER ASSESSMENT FOR CITY OF PLUMMER

## Section 1. Introduction - Basis for Assessment

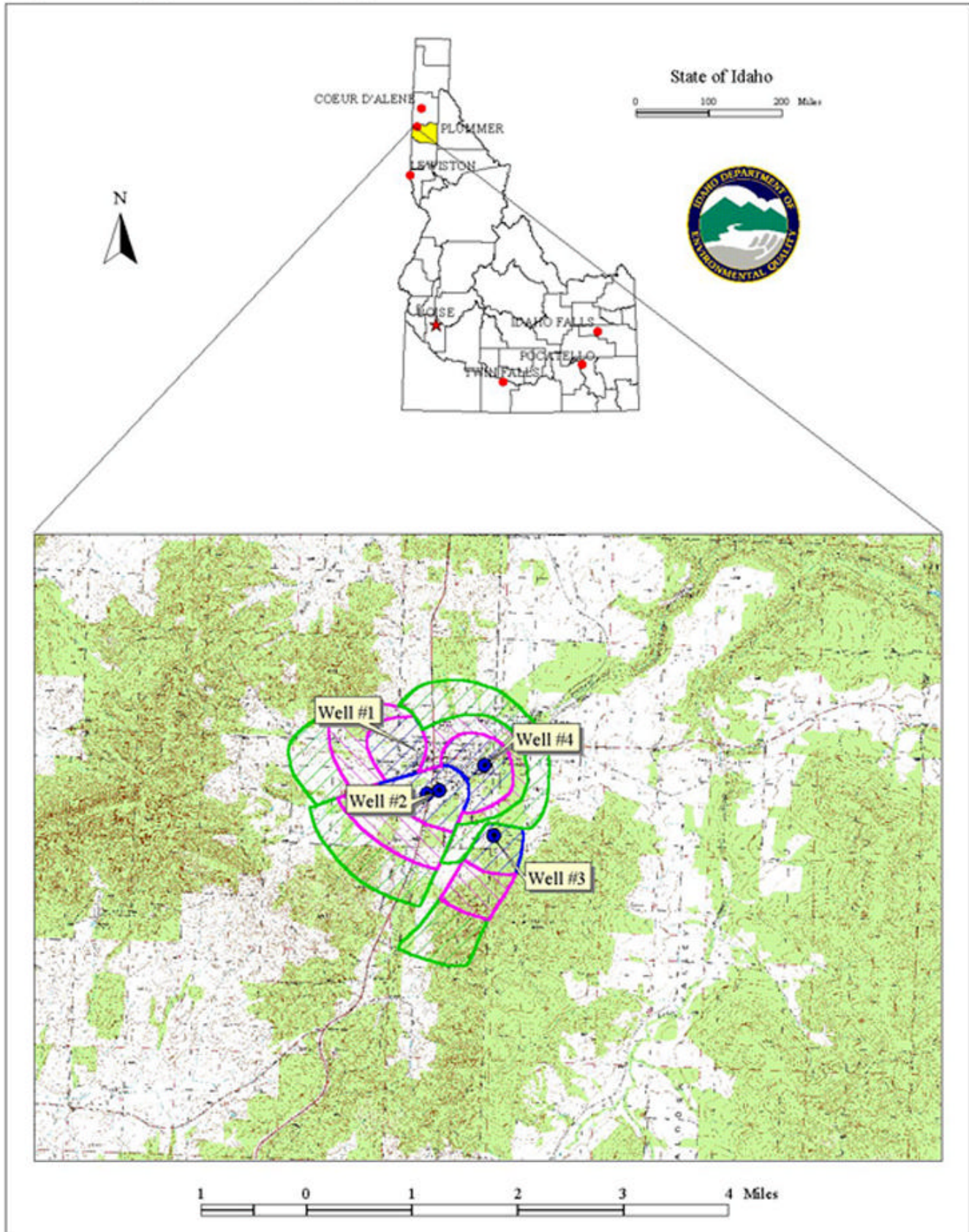
The following sections contain information necessary for understanding how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and an inventory of significant potential sources of contamination identified within that area are included. The ground water Susceptibility Analysis Worksheet used to develop this assessment is attached.

### Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess every public drinking water source in Idaho for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. These assessments are based on a land use inventory inside the delineated recharge zones, sensitivity factors associated with how the well is constructed, and aquifer characteristics. The state must complete more than 2900 assessments by May of 2003. Because resources and the time available to accomplish assessments are limited, an in-depth, site-specific investigation for every public water system is not possible.

**The results of the source water assessment should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.** The ultimate goal of this assessment is to provide data to local communities for developing a protection strategy for their drinking water supply. The Idaho Department of Environmental Quality recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Figure 1. Geographic Location of City of Plummer



## **Section 2. Preparing for the Assessment**

### **Defining the Zones of Contribution - Delineation**

The delineation process establishes the physical area around a well that will become the focal point of the assessment and future protection efforts. The process includes mapping the boundaries of the well recharge area into time of travel zones indicating the number of years necessary for a particle of water flowing through the aquifer to reach a well. The ground water flow model used data DEQ assimilated from a variety of sources including local well logs and pumping volume estimates for the City of Plummer wells.

The City of Plummer community water system has 413 connections serving a population of 800 residents. Plummer is located adjacent to Highway 95 in western Benewah County (Figure 1). 4 wells drawing from a basalt aquifer supply drinking water and water for fire protection. Well #1 was drilled in 1975 to a depth of 423 feet. It produces an estimated 160 gallons per minute. Well#2, drilled in 1983, is 120 feet deep and produces 265 gpm. Well #3 was drilled at an unknown date, and deepened to 724 feet in 1974. It supplies 60 gpm. Well #4 is 100 feet deep and produces 150 gpm. It was drilled in 1994.

By using the City of Plummer and other well logs in the vicinity, a determination was made as to the extent of the water producing basalt zone that has a surface expression in the canyon of Plummer Creek. Upgradient no flow boundaries for the ground water models were set at the watershed boundaries. Numerous specific capacity tests for wells in the Plummer area defined the model parameters. Hydraulic conductivity was varied from 2 to 4 feet per day. The thickness of the aquifer was varied from 40 to 50 feet. Porosity was set at 0.1, and recharge was set at approximately 2 inches per year to provide the volume of water needed to support the various pumping maximums modeled. The delineations enclose 570, 790, 475, and 875 acres for Wells 1 through 4 respectively. All of the delineation are divided into 0-3, 3-6 and 6-10 year time of travel zones. None of the delineation reaches the watershed boundary.

### **Identifying Potential Sources of Contamination**

The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. Inventories for all public water systems in Idaho were conducted in two-phases. The first phase involved identifying and documenting potential contaminant sources within a system's source water assessment area through the use of computer databases and Geographic Information System maps developed by DEQ. Maps showing the delineations and tables summarizing the results of the database search were then sent to system operators for review and correction during the second or enhanced phase of the inventory process. Dave Janson, the Plummer water system operator and city clerk Donna Spier completed comprehensive inventories in the recharge zones for the 4 wells.

Figures 2 through 5 show the locations of the City of Plummer wells, the delineated recharge zones and potential contaminant sites. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. When a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation.

### Section 3. Susceptibility Analysis

The susceptibility to contamination of all ground water sources in Idaho is being assessed on the following factors:

- physical integrity of the well,
- hydrologic characteristics,
- land use characteristics, and potentially significant contaminant sources
- historic water quality

The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. A high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking. The Susceptibility Analysis Worksheets for the City of Plummer wells, Attachment A, shows in detail how the wells are scored.

#### **Well Construction**

Construction features directly affect the ability of the wells to protect the aquifer from contaminants. Lower scores imply a well that can better protect the water. This portion of the susceptibility analysis relies on information from individual well logs and from the most recent sanitary survey of the public water system. Well logs are available for all of the Plummer Wells except #3. When the water system was inspected in July 2001 it was being operated and maintained in compliance with the *Idaho Rules for Public Water Systems*. Only minor deficiencies in wellhead and surface seal maintenance were noted during the survey. All of the wells needed to be vented. An electrical conduit that had separated from the #4 wellhead needed to be repaired.

**Well #1.** The City of Plummer Well #1 is 423 feet deep with an 8-inch steel casing of unknown gauge to a depth of 60.25 feet. The remaining extent of the well bore is free standing. The 20-foot deep puddling clay surface seal terminates in a clay bed that reaches from the surface to 37 feet below. Water was first encountered in a rock and clay stratum 343 to 389 feet below the surface. The static water level in Well #1 is 47 feet below ground.

**Well #2.** Well #2 was drilled in 1983 and is 120 deep. The 8 inch steel casing extends from a foot above grade to a depth of 36 feet, with a 6-inch PVC liner reaching to the full depth of the well. Except for a minor difference in the casing wall thickness the well meets current Idaho Department of Water Resources well construction standards. The standards specify 0.322-gauge steel for an 8-inch casing. The casing on Well #2 is 0.25 inches thick. The 30-foot deep bentonite surface seal penetrates a confining layer of clay from 5 to 10 feet below the surface. Static water level in Well #2 is 20 feet below land surface. Water is produced in a basalt layer that begins 36 feet below ground and continues to 120 feet.

### **Well Construction continued**

**Well #3.** The only driller's report found for Well #3 is for deepening the well to 724 feet in 1973. No information is available about the depth of the casing and surface seal and other construction details used to assess vulnerability to contamination. Unknown risks were scored conservatively.

**Well #4.** Well #4 was drilled in 1994 to a depth of 100 feet. It was constructed with a 10 inch outer casing extending from 2 feet above grade to 38 feet below, an 8 inch casing to a depth of 66 feet and well screen from 66 to 80 feet. The 40-foot bentonite surface seal extends through 8 feet of clay at the surface and broken basalt before terminating in a gray basalt formation that starts 34 feet below the surface. Static water level in Well #4 is 15 feet below land surface. Water was first encountered in a soft gray basalt layer from 52 to 64 feet. The highest production level in the well is 74 to 78 feet below ground.

### **Hydrologic Sensitivity**

Hydrologic sensitivity scores reflect natural geologic conditions at the well site and in the recharge zone. Information for this part of the analysis is derived from individual well logs and from the soil drainage classification inside the delineation boundaries. The City of Plummer Well #1 scored 0 points out of 6 points possible in the hydrologic sensitivity portion of the susceptibility analysis. Hydrologic sensitivity scores for Wells #2 and #3 are 4 points. The score for Well #4 is 3 points.

Soils in the recharge zones for all the wells generally are poorly drained to moderately well drained. Soils that drain slowly are deemed more protective of ground water than rapidly draining soil. Well #1 gets additional protection from 52 feet of clay, clay stone and unfractured basalt in the soil column above a deep (343-389 feet) water table.

The water table in Well #2 starts 36 feet below the surface. Broken basalt is the predominant material above the water table. The 5-foot thick clay bed near the surface provides some protection against vertical transport of contaminants, but is too shallow to be counted as an aquitard.

Points marked against Well #3 in the hydrologic sensitivity portion of the analysis derive from unknown risk factors. Nothing is known about the soil composition or depth to first water since the well log is unavailable.

8 feet of clay and a band of broken basalt cover the unbroken brown and gray basalt is the dominant material above the water table in Well #4. First water was encountered 52 feet below the surface.

## **Potential Contaminant Sources and Land Use**

Figures 2 through 5 show the location of the City of Plummer wells, and their recharge zone boundaries. David Janson, the Plummer water system operator and Donna Spier, Plummer city clerk, prepared an extensive inventory of potential contaminant sites in the Plummer area to supplement the inventory generated by DEQ. Well #1 is situated in a mostly residential area near the west edge of town. Well #2 is south of town with part of its 0-3 year time of travel zone covered by an industrial and commercial area. It is located above the flood plain and about 200 feet south of Plummer Creek. Testing indicates that Well #2 is not hydraulically connected to the creek. Well #3 and its recharge zone are in an undeveloped, mostly wooded area east of Highway 95. Well #4 is on the east side of Plummer. Residential areas cover about 45 per cent of the 0-3 year time of travel zone delineated for the well. Most of the commercial area paralleling Highway 95 is inside the 3-6 year time of travel zone. Agriculture is the most important land use in the delineated areas outside of the town.

**Table 1. City of Plummer Potential Contaminant Inventory**

<b>Well #1</b>				
Map ID	TOT Zone	Description	Potential Contaminants	Source of Information
1	0-3	Service Station & Bulk Plant	IOC, SOC, VOC	Enhanced Inventory
2	3-6	Cemetery	IOC, SOC	Enhanced Inventory
<b>Well #2</b>				
Map ID	TOT Zone	Description	Potential Contaminants	Source of Information
1	0-3	Borrow Pit	Illegal Dumping	Mines Database
2	0-3	Wood Products Plant	IOC, SOC, VOC	SARA Database
3	0-3	Bulk Petroleum	IOC, SOC, VOC	Enhanced Inventory
4	0-3	Wrecker Service	IOC, SOC, VOC	Enhanced Inventory
5	0-3	Auto body shop & wrecker	IOC, SOC, VOC	Enhanced Inventory
6	0-3	Truck Repair	IOC, SOC, VOC	Enhanced Inventory
7	0-3	General Contractor	IOC, SOC, VOC	Enhanced Inventory
<b>Well #4</b>				
Map ID	TOT Zone	Description	Potential Contaminants	Source of Information
1	6-10	Municipal Discharge	IOC, VOC	NPDES Database
2	6-10	Gravel Pit	Illegal Dumping	Mines Database
3	6-10	Group 1 Site	IOC	Group 1 Database
4	3-6	Service Station	IOC, SOC, VOC	Enhanced Inventory
5	3-6	Medical Clinic	IOC, SOC	Enhanced Inventory
6	3-6	Store	IOC, SOC, VOC	Enhanced Inventory
7	3-6	Body Shop & Mechanic	IOC, SOC, VOC	Enhanced Inventory
8	3-6	Service Station	IOC, SOC, VOC	Enhanced Inventory
9	3-6	Car Wash	IOC, SOC, VOC	Enhanced Inventory
10	3-6	Service Station/Store	IOC, SOC, VOC	Enhanced Inventory



### **Historic Water Quality**

The City of Plummer has had no water quality problems other than sporadic instances of total coliform bacteria contamination including maximum contaminant level violations in January and July 2000. The problem was apparently confined to the distribution system. In the January incident, all the contaminated samples came from one location. The July incident may have been caused by line breaks, fire fighting or hydrant flushing. The city routinely chlorinates its water with Miox units on Wells #2 and #4. The chlorinated water mixes with water from the other two wells in the looped distribution system and reservoirs. Chemical and radiological sampling results for the City of Plummer are summarized on the table below.

The City of Plummer is fortunate to have multiple wells, but should still have a written water emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website ([www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)) to guide systems through the process.

### **Final Susceptibility Ranking**

The City of Plummer Wells #1 and #4 have a low risk of becoming contaminated. Wells #2 and #3 are moderately susceptible to all classes of regulated contaminants. Risk factors related to local geology and the relative shallowness of Well #2 added the most points to its final susceptibility scores. Unknown risk factors associated with well construction and soil composition at the well site account for most of the points marked against Well #3. Total scores for system construction and hydrologic sensitivity along with the cumulative scores for land use and potential contaminant sites are shown on Table 2. The complete Susceptibility Analysis Worksheet for the City of Plummer well can be found in Attachment A.

The final scores for the susceptibility analysis were determined using the following formulas:

- 1)  $\text{VOC/SOC/IOC Final Score} = \text{Hydrologic Sensitivity} + \text{System Construction} + (\text{Potential Contaminant/Land Use} \times 0.2)$
- 2)  $\text{Microbial Final Score} = \text{Hydrologic Sensitivity} + \text{System Construction} + (\text{Potential Contaminant/Land Use} \times 0.35)$

The final ranking categories are as follows:

- 0 - 5      Low Susceptibility
- 6 - 12     Moderate Susceptibility
- > 13      High Susceptibility.

**Table 2. City of Plummer Chemical Sampling Results**

Primary IOC Contaminants (Mandatory Tests)							
Contaminant	MCL (mg/l)	Results (mg/l)	Dates	Contaminant	MCL (mg/l)	Results (mg/l)	Dates
Antimony	0.006	ND	4/25/94 - 9/16/98	Nickel	N/A	ND	4/25/94 - 9/16/98
Arsenic	0.01	ND	11/12/80 - 2/14/01	Selenium	0.05	ND	11/12/80 -9/16/98
Barium Well #1	2	ND	11/12/80 - 9/16/98	Sodium Well #1	N/A	18.1 to 19.6	2/11/97 - 2/14/01
Barium Well #4	2	ND	5/11/94 - 9/16/98	Sodium Well #2	N/A	15.9 to 37. 4	2/11/97 - 2/14/01
Barium Well #2	2	ND to 0.03	4/25/94 -;9/16/98	Sodium Well #3	N/A	3.43 to 14.2	11/13/86 - 2/14/01
Barium Well #3	2	ND to 0.17	1/13/86 - 9/16/98	Sodium Well #4	N/A	7.97 to 10	5/11/94 - 2/14/01
Beryllium	0.004	ND	4/25/94 - 9/16/98	Thallium	0.002	ND	4/25/94 - 9/16/98
Cadmium	0.005	ND	11/12/80 - 9/16/98	Cyanide	0.02	ND	4/25/94, 5/11/94
Chromium	0.1	ND	11/12/80 - 9/16/98	Fluoride Well #1	4.0	0.37, 0.6	4/25/94, 9/16/98
Nitrate Well #1	10	ND to 0.023	2/16/84 - 2/14/01	Fluoride Well #2	4	ND- 0.22	4/25/94, 9/16/98
Nitrate Well #2	10	ND	6/9/93 - 2/14/01	Fluoride Well #3	4	ND - 0.2	4/25/94, 9/16/98
Nitrate Well #3	10	ND to 0.22	11/13/86 - 2/14/01	Fluoride Well #4	4	ND	5/11/94, 9/16/98
Nitrate Well #4		0.173 to 0.989	5/11/94 -2/14/01	Mercury	0.002	ND	11/12/80 - 9/16/98
Regulated and Unregulated Synthetic Organic Chemicals							
Contaminant			Results		Dates		
29 Regulated and 13 Unregulated Synthetic Organic Compounds			None Detected		8/3/93 - 2/14/01		
Regulated and Unregulated Volatile Organic Chemicals							
Contaminant			Results		Dates		
21 Regulated And 16 Unregulated Volatile Organic Compounds			None Detected		4/14/93 - 2/14/01		
Radiological Contaminants							
Contaminant		MCL	Results		Dates		
Gross Alpha, Including Ra & U Well #1		15 pC/l	0.9 to 1.1 pC/l		4/29/93, 9/16/98		
Well #2			2.5, ND pC/l		4/29/93, 9/16/98		
Well #3			0.8, 1.0 pC/l		4/29/93, 9/16/98		
Well #4			ND, 1.8 pC/l		5/23/94, 9/16/98		
Gross Beta Particle Activity Well #1		4 mrem/year	3.0, 2.5 mrem		4/29/93, 9/16/98		
Well #2			2.5, 2.3mrem		4/29/93, 9/16/98		
Well #3			1.3, 1.2 mrem		4/29/93, 9/16/98		
Well #4			1.6, 1.9 mrem		5/23/94, 9/16/98		

**Table 3. Summary of City of Plummer Susceptibility Evaluation**

<b>Cumulative Susceptibility Scores</b>						
<b>Well Name</b>	System Construction 0-6 possible	Hydrologic Sensitivity 0-6 possible	Contaminant Inventory plus Land Use			
			IOC 0-30 possible	VOC 0-30 possible	SOC 0-30 possible	Microbial 0-30 possible
Well #1	0	0	11	8	11	3
Well #2	1	4	11	14	14	2
Well #3	4	4	0	0	0	0
Well #4	1	3	7	5	5	2
<b>Final Susceptibility Scores/Ranking</b>						
<b>Well Name</b>	IOC 0-18 possible	VOC 0-18 possible	SOC 0-18 possible	Microbial 0-18 possible		
Well #1	2/Low	2/Low	2/Low	2/Low		
Well #2	7/Moderate	8/Moderate	8/Moderate	7/Moderate		
Well #3	8/Moderate	8/Moderate	8/Moderate	8/Moderate		
Well #4	5/Low	5/Low	5/Low	5/Low		

Low numbers are favorable because high scores indicate increased susceptibility to contaminants

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

\*High due to presence of surface water in sanitary setback zone.

## Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The City of Plummer water system is well run. Continuing to operate and maintain the wells in compliance with the *Idaho Rules for Public Drinking Water Systems* is probably the most important drinking water protection tool available to the city. Plummer needs to create a cross connection control program. Microbial contamination in July 2002 may have started with back siphonage into the distribution system when a demand for water for fire fighting caused low pressure in portions of the system.

Public education should be a big part of any protection plan the city develops. Managing fuel storage facilities, vehicle maintenance sites, and agricultural practices to prevent ground water contamination are pertinent topics in the Plummer well recharge area. Distributing industry specific best management practices brochures during visits to businesses or agricultural operations in the well recharge zones may be helpful. Partnerships with other governmental agencies should also be established. Protection measures related to agriculture for instance could be coordinated through the county extension office or the Natural Resource Conservation Service.

## **Assistance**

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

### **Idaho Department of Environmental Quality**

Coeur d'Alene Regional IDEQ Office  
State IDEQ Office, Boise  
Website:

(208) 769-1422  
(208) 373-0502  
<http://www.deq.state.id.us/>

### **Idaho Rural Water Association**

Melinda Harper, Groundwater Protection Specialist  
Website:

(800) 962-3257  
<http://www.idahoruralwater.com>

### **Idaho Association of Soil Conservation Districts**

Water quality and soil conservation  
Website:

(208) 338-5900  
<http://www.iascd.state.id.us/>

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## Attachment A

### City of Plummer Susceptibility Analysis Worksheet

**Ground Water Susceptibility**

Public Water System Name : **PLUMMER CITY OF**  
Public Water System Number : **1050021**

Source: **WELL #1**  
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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	12/75				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	YES			0	
Wellhead and surface seal maintained	YES			0	
Casing and annular seal extend to low permeability unit	YES			0	
Highest production 100 feet below static water level	YES			0	
Well located outside the 100 year flood plain	YES			0	
<b>Total System Construction Score</b>				<b>0</b>	
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	YES			0	
Vadose zone composed of gravel, fractured rock or unknown	NO			0	
Depth to first water > 300 feet	YES			0	
Aquitard present with > 50 feet cumulative thickness	YES			0	
<b>Total Hydrologic Score</b>				<b>0</b>	
<b>3. Potential Contaminant / Land Use</b>		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use	DRYLAND AGRICULTURE	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Potential Contaminant / Land Use - ZONE 1B (3 YR. TOT)</b>					
Contaminant sources present (Number of Sources)	YES	1	1	1	0
(Score = # Sources X 2 ) 8 Points Maximum		2	2	2	0
Sources of Class II or III leacheable contaminants or Microbials	YES	1	1	1	
4 Points Maximum		1	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land	2	2	2	2
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>2</b>
<b>Potential Contaminant / Land Use - ZONE II (6 YR. TOT)</b>					
Contaminant Sources Present	YES	2	0	2	
Sources of Class II or III leacheable contaminants or Microbials	YES	1	0	1	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>4</b>	<b>1</b>	<b>4</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE III (10 YR. TOT)</b>					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	YES	1	1	1	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>11</b>	<b>8</b>	<b>11</b>	<b>3</b>
<b>4. Final Susceptibility Source Score</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>5. Final Well Ranking</b>		Low	Low	Low	Low

**Ground Water Susceptibility**

Public Water System Name :

**PLUMMER CITY OF**Source: **WELL #2**

Public Water System Number :

**1050021**

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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	8/83				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	NO	1			
<b>Total System Construction Score</b>		<b>2</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>4</b>			
<b>3. Potential Contaminant / Land Use -</b>		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Potential Contaminant / Land Use - ZONE 1B ( 3 YR. TOT)</b>					
Contaminant sources present (Number of Sources)	YES	3	6	6	0
(Score = # Sources X 2 ) 8 Points Maximum		6	8	8	0
Sources of Class II or III leacheable contaminants or Microbials	YES	3	6	6	
4 Points Maximum		3	4	4	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>9</b>	<b>12</b>	<b>12</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE II (6 YR. TOT)</b>					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE III (10 YR. TOT)</b>					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>11</b>	<b>14</b>	<b>14</b>	<b>2</b>
<b>4. Final Susceptibility Source Score</b>		<b>8</b>	<b>9</b>	<b>9</b>	<b>7</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	Moderate

**Ground Water Susceptibility**

Public Water System Name : **PLUMMER CITY OF**  
 Public Water System Number : **1050021**

Source: **WELL #3**  
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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	2/73				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>4</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	UNKNOWN	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
<b>Total Hydrologic Score</b>		<b>4</b>			
<b>3. Potential Contaminant / Land Use -</b>		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use	UNDEVELOPED	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score -</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE 1B ( 3 YR. TOT)</b>					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2 ) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE II (6 YR. TOT)</b>					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE III (10 YR. TOT)</b>					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>4. Final Susceptibility Source Score</b>		<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	Moderate



**Ground Water Susceptibility**

Public Water System Name :

**PLUMMER CITY OF**

Source:

**WELL #4**

Public Water System Number :

**1050021**

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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	4/94				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	NO	1			
<b>Total System Construction Score</b>		<b>2</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>3</b>			
<b>3. Potential Contaminant / Land Use -</b>		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Total Potential Contaminant Source/Land Use Score</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Potential Contaminant / Land Use - ZONE 1B ( 3 YR. TOT)</b>					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2 ) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - Zone 1B</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE II (6 YR. TOT)</b>					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or Microbials	YES	1	1	1	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
<b>Potential Contaminant Source / Land Use Score - Zone II</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>0</b>
<b>Potential Contaminant / Land Use - ZONE III (10 YR. TOT)</b>					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of Zone	NO	0	0	0	
<b>Total Potential Contaminant Source / Land Use Score - Zone III</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>2</b>
<b>4. Final Susceptibility Source Score</b>		<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>
<b>5. Final Well Ranking</b>		Moderate	Moderate	Moderate	Moderate

## POTENTIAL CONTAMINANT INVENTORY

### LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.